DOCUMENT RESUME

ED 407 333 SO 027 950

| | |
|---|---|
| AUTHOR | Patton, Sally J.; Maxon, Dianne |
| TITLE | Architexture: A Shelter Word. A Source Guide for Self-Directed Units. Revised Edition. Great Ideas Series. |
| REPORT NO | ISBN-0-9137057-38-1 |
| PUB DATE | 89 |
| NOTE | 59p. |
| AVAILABLE FROM | Zephyr Press, P.O. Box 13448, Tucson, AZ 85732-3448. |
| PUB TYPE | Guides - Non-Classroom (055) |
| EDRS PRICE | EDRS Price MF01 Plus Postage. PC Not Available from EDRS. |
| DESCRIPTORS | Ancient History; *Architectural Education; *Architecture; Built Environment; Elementary Education; Instructional Materials; Interdisciplinary Approach; *Social Studies; Visual Arts |

ABSTRACT

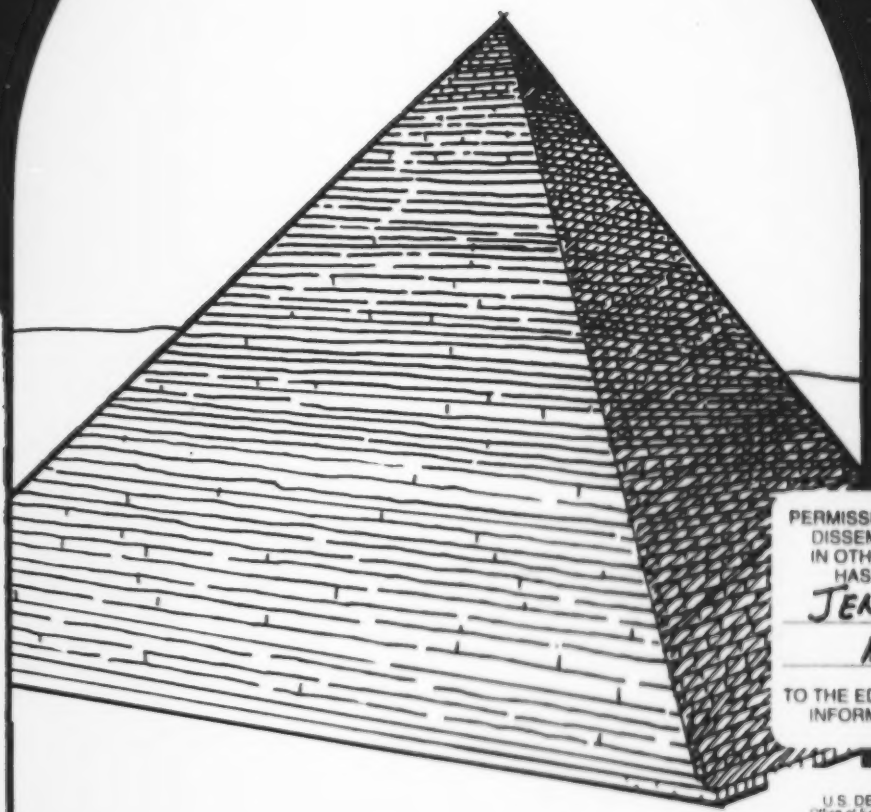
This teaching resource provides instructional strategies and information for teaching students about architecture. Discussion questions encourage interdisciplinary considerations. Unit goals and objectives are given. The five units include: (1) "Cave"; (2) "Pyramids"; (3) "House of Ancient Greece"; (4) "Castles"; and (5) "Traditional House of Japan." Each unit includes background information, vocabulary, activity task cards, and a floor plan. The guide concludes with a checklist of materials, general references, and a glossary. (MM)

**********
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
**********

# ARCHITEXTURE

## A Shelter Word

ED 407 333



SO 027 950

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN OTHER THAN PAPER COPY HAS BEEN GRANTED BY
JENNIFER MANKE
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
X This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

## Great Ideas Series

BEST COPY AVAILABLE

# ARCHITEXTURE:
## A SHELTER WORD

### A Source Guide for Self-Directed Units

By Sally J. Patton and Dianne Maxon

1391

ZEPHYR PRESS
Tucson, Arizona

**ARCHITEXTURE**
Sally J. Patton and Dianne Maxon, authors.

ISBN: 0-9137057-38-1

© 1979, Patton Pending
© 1989, Revised Edition, Zephyr Press, Tucson, AZ

Patton Pending books are a series of learning centers. The contents come from the workshops and teaching experiences of Sally Patton, educator extraordinaire. Her years of working with and for gifted students have resulted in books that promote thinking on topics worth thinking about. We dedicate them to growing, creative teachers everywhere!

**Zephyr Press, P.O. Box 13448, Tucson, AZ 85732-3448**

All rights reserved. The purchase of this book entitles the individual teacher to reproduce the student activities for use in the classroom. The mechanical or electronic reproduction of any part for an entire school or school system or for commercial use is strictly prohibited. No form of this work may be reproduced or transmitted or recorded without written permission from the publisher.

Illustrations: Kathleen Koopman
Educational consultant: Shirley Schiever, Ph.D.

ACKNOWLEDGMENT
The authors want to thank Bellerophon Books for permission to reproduce prints from their coloring book: ***Castles.***

## CONTENTS


TO THE TEACHER ..... 4
GUIDING QUESTIONS ..... 6

FRAMEWORK—Goals of the Unit ..... 10
Taxonomy of Cognitive Objectives ..... 10

FOUNDATIONS ..... 12

CAVES ..... 13
Vocabulary ..... 15
Activities ..... 16
Floor Plan ..... 18

PYRAMIDS ..... 19
Vocabulary ..... 22
Activities ..... 23
Elevation ..... 25

HOUSE OF ANCIENT GREECE ..... 26
Vocabulary ..... 29
Activities ..... 30
Floor Plan ..... 32

CASTLES ..... 33
Keep (illustration) ..... 35
Vocabulary ..... 36
Some Famous Castles (map) ..... 37
Activities ..... 38
Floor Plan ..... 40

TRADITIONAL HOUSE
OF JAPAN ..... 41
Vocabulary ..... 43
Activities ..... 44
Floor Plan ..... 46

CREATING A LEARNING CENTER ..... 47
Checklist of Materials for the Learning Center ..... 48

RESOURCES ..... 49
GENERAL REFERENCES ..... 50

GLOSSARY ..... 51

## TO THE TEACHER

*Architexture* is a learning center within a book. The first part of each section of the book gives you, the teacher, in-depth background information on the subject to be studied. A generous bibliography gives easy access to rich resources for your classroom. We hope you'll add to this list resources of your own: posters, music, filmstrips, and artifacts that will excite your students about architecture. Designate a special section of the classroom with chairs, tables, the resources, and bulletin boards and give ample time for browsing.

Several student assignments are included in each section. Select assignment cards that fit the ability level of the students. Reproduce the assignments, then cut each one out separately. Glue each assignment onto a piece of colored tagboard that has been cut in a shape of your choice. Create a shape to fit the subject or, better yet, have your students create the pattern shape. You decide how many of the assignments each student should complete, then let the students select their own based on their interest and enthusiasm. A real value for the students is to have the opportunity to read and consider many of the assignments and then choose their own. They will learn as they read and perhaps find a new interest or direction to pursue.

### Effective Use of *ARCHITEXTURE*

This book contains a wealth of information that the teacher and the students can draw on, as well as a variety of tasks to facilitate student learning. As with any method or the use of any tool, the end result or product depends on correct and careful use. These pages are designed to help teachers enhance and facilitate students' learning. The following are offered to this end:

1. Review the tasks provided to check for skills that need to be taught before beginning the unit. For example, many students do not know how to evaluate according to criteria. Therefore, the teacher's task is to provide information and practice in developing criteria and using them to evaluate ideas. Rank ordering and providing reasons to support the order may be new to students; comparing and contrasting, which requires finding similarities *and* differences, may also need to be taught.
2. The purpose of the tasks is to require students to process information or to use the higher levels of thinking. A knowledge base is critical to higher-level thinking, and the teacher must establish that students have sufficient information on the topic before they choose tasks.
3. The tasks in this book are based on Bloom's Taxonomy of Cognitive Objectives, which is a

hierarchical model. A hierarchical model of thinking requires a sequential movement through the steps, as each level builds on the preceding one. While disagreement exists regarding whether evaluation requires a higher level of thinking than synthesis, students must recall, understand, and be able to apply and analyze information and concepts before they can engage in synthesis or evaluative thinking. Requiring students to complete a task at each level is not necessary if the teacher employs some means to ensure the existence of the necessary depth of understanding.

4. Evaluation of student learning, progress, and products is important. Such evaluation should provide the student, teacher, administrator, and parent with information about the learning that is occurring. One way to evaluate is for the teacher to develop general criteria for all students, based on district and program goals, and allow each student to develop (usually in conjunction with teacher and perhaps parent input) specific criteria that he or she wants to have included in the evaluation. When possible, the evaluation should include persons in addition to the teacher and the student. Other school personnel or community members may be appropriate for the evaluation of some products.
5. A synthesis of each topic covered in this book is provided and may be used as background information for the teacher and/or students. Gathering an abundance of other resources is critical to the successful use of this book. Students need the experience of gathering information from a variety of sources, especially if the sources differ in viewpoint or even "facts" presented.
6. In each section, the particular type of shelter discussed could be used in a learning center, or copied for each student for extra work in class or to take home.
7. At the end of each section is a list of suggested vocabulary words that have appeared in bold type in the text. Have students look up and write the definitions of the words and use them in the context in which they are used in the text. A glossary of all definitions appears in the back of the book.
8. Many of the tasks and suggested products herein are oriented toward verbal expression. Encourage students to find other ways to illustrate their ideas or what they've learned; ways that reflect their personal learning styles or modes of expression. Additionally, encourage them to use a variety of media to express themselves and to be (or become) risk-takers in occasionally choosing the unfamiliar.

Good Luck—may you and your students learn and grow from the use of these materials!

## GUIDING QUESTIONS

As guides to major concepts from the social sciences, the following questions may be interspersed throughout the study of shelter and architecture to encourage a broad pursuit of ideas on the topic. The teacher, or teacher and students together, may choose those areas of focus for investigation, discovery, and discussion.

**Physical Geography**

1. How have differences in climate affected the shelter needs of different civilizations?
2. How have some architects and builders been especially affected by the climate where they live?
3. In what ways have buildings and homes been adapted and modified in response to problems presented by climatic conditions?
4. What other physical conditions of the land have limited or helped architects or builders?

**Cultural Geography**

1. In what way has the environment in a particular locale contributed to architectural styles?
2. How have social and societal patterns in different cultural environments affected shelter needs?
3. In what ways has the political environment modified the creative productivity of architects?
4. In what parts of the world have economic, social, and political factors increased public and community building?
5. In what areas have conditions been such that building production was inhibited?

**History**

1. How would you present the sequence of development of architectural styles through the ages, from caves to present-day technology?
2. Why have changes, increased building, and technological innovation taken place more rapidly during certain periods in history?

3. What has contributed to the inhibition or delay of architectural progress during other periods in history?
4. What have been some of the common characteristics of people who built shelters in the different periods in history?
5. What are the implications for architectural progress in our day?
6. What are your predictions for shelter needs in the future?
7. What may be the effects of a cultural heritage on various kinds of shelter?
8. What has appeared to be the role of ideals, ethics, and moral values in the development of human shelter and environments?
9. How would you collect, specify, analyze, and interpret data related to any of the previous questions?

**Political Science**

1. What has been the importance of the government in the development of a particular national architectural style?
2. How has a particular country's philosophy of government affected the public buildings in that country?
3. What may be the particular conditions that foster "social architecture"?
4. Why do certain countries appear to have more flexible and creative people creating the new architecture?
5. How may people someday invent an effective international, even global and interplanetary, architecture based on humanistic ideals?
6. What are the conditions under which the civilization produces larger measures of freedom to create their homes and public spaces?
7. What are some of the differences between a political climate in which architects are contributing to humanity and a political climate in which architects develop more in terms of self-interest only?
8. Is democracy necessary to foster creative productivity in citizens?
9. How do architects show their responsibility as citizens?

**Economics**

1. How have architects and builders contributed to the economic welfare and economic progress of society?
2. What are the relationships between the creative arts (painting, music, and literature), architecture, and the productivity of the economy?

3. What evidence is there that shelter needs are met despite economic deprivation?
4. Does competition foster or inhibit innovative building styles? Why?
5. What may be the relationship between standard of living and home environments in various countries?

**Anthropology**

1. What factors contribute to the evolution of more sophisticated architectural advancements?
2. How would you characterize the development of less creative or minimum shelters?
3. What is some of the earliest evidence of people's ability to adapt and adjust to their natural environment?
4. In what ways are home builders inventive in adapting to the natural environment?
5. What would it be like if you imagined yourself to be an architect 1000 years ago? 500 years ago? 100 years ago? 50 years ago?
6. How is your cultural background related to your own home environment?
7. What are the creative opportunities and the urgent problems that need resolution in our shelter needs today?
8. In what ways will shelter change in the next 100 years?
9. What are some of the shelter problems that people must resolve to promote the welfare of humankind and mutual respect for various cultural patterns?
10. What variations exist in the shelter needs of various ethnic groups? Why do such differences exist?
11. What is the responsibility of the architect or builder to society?

**Psychology**

1. How can shelter affect how we feel both physically and emotionally?
2. How are architects and builders regarded by the general public?
3. To what extent do architects and builders shape our shelter needs and desires?
4. In what ways could the builder of a house or apartment influence the lives of the inhabitants?

**Sociology**

1. How does our shelter communicate our ideas about ourselves and our lives?
2. How is social class reflected by one's home or apartment?

3. How well does the architecture of a society relate to its established goals? Why?
4. In what ways are some societies more architecturally advanced than others? Why?
5. How do such societies adapt and progress more rapidly than others?

**Philosophy**

1. How do people's values and philosophies relate to the personal style of their living environment?
2. How do logic and emotions influence shelter?
3. How does a society's architectural heritage reflect its philosophical ideals?
4. In what ways can a building or home express the values of its inhabitants?
5. Think of a national building and describe how it expresses the ideals of that nation.

Adapted from Catherine B. Bruch, *Curriculum Guide for Teaching Gifted Children Social Sciences in Grades Four through Six*, prepared for the Division of Special Education, California State Department of Education, 1970.

## FRAMEWORK

### GOALS OF THE UNIT

1. To become aware of the basic human need for shelter
2. To understand the influence of environment on shelter
3. To recognize the contributions of diverse cultures to the principles of architecture
4. To understand the parallels between the growth of civilization and its architecture
5. To appreciate architecture as an art
6. To value the beauty of aesthetic principles in the architecture of the world

### TAXONOMY OF COGNITIVE OBJECTIVES

| | |
|---|---|
| KNOWLEDGE | LEARNING THE INFORMATION |
| COMPREHENSION | UNDERSTANDING THE INFORMATION |
| APPLICATION | USING THE INFORMATION |
| ANALYSIS | EXAMINING SPECIFIC PARTS OF THE INFORMATION |
| SYNTHESIS | DOING SOMETHING NEW AND DIFFERENT WITH THE INFORMATION OR INTEGRATING INFORMATION FROM A VARIETY OF SOURCES |
| EVALUATION | MAKING A JUDGMENT BASED ON THE IN FORMATION AND PREDETERMINED CRITERIA |

Benjamin S. Bloom et al., *Taxonomy of Educational Objectives, Handbook I: Cognitive Domain* (New York: David McKay Co., 1956).

To help you determine the level at which a student is functioning according to Bloom's Taxonomy of Cognitive Objectives, here are some questions you might ask:

**KNOWLEDGE**

1. Is the student familiar with the basic concepts of each unit?
2. Does the student know fundamental methods of obtaining relevant information?

**COMPREHENSION**

1. Can the student condense complex ideas?
2. Can the student extrapolate important elements of information?

**APPLICATION**

1. Can the student present concepts in a concrete form (e.g., book report, mobile)?
2. Can the student use relevant information to determine outcomes?

**ANALYSIS**

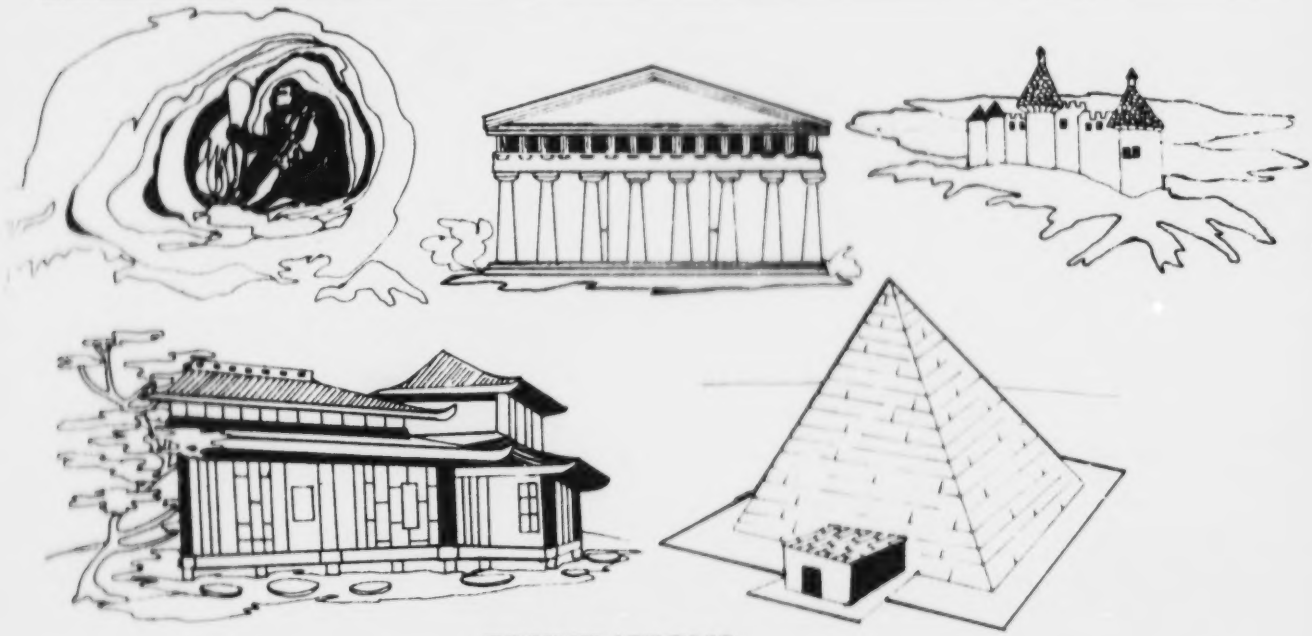
1. Does the student recognize the components of an idea or concept?
2. Does the student understand the interrelationship of the parts to the whole?

**SYNTHESIS**

1. Can the student create innovative or unique concepts or ideas related to this unit?
2. Does the student evidence "risk-taking"?

**EVALUATION**

1. Can the student associate past events with the present and the future?
2. Can the student differentiate between facts and assumptions?



## FOUNDATIONS

Shelter is one of the basic human needs.

The nature of human shelter has been governed by

- the purpose of the building
- the prevailing climate
- the materials available

Therefore, shelter is functional.

And

it is more than that.

There is a value that lies outside of function.

It is people's urge to build the beautiful.

Endowed with this aesthetic quality,

building becomes architecture.

Shelter also reflects. It reflects culture and human aspirations. "To trace the history of architecture is to trace the history of humankind and their civilization."

**CAVES**

13

# CAVES

## BACKGROUND INFORMATION

For more than a million years, people made their homes in **caves**. The early cave dwellers were hunters and food gatherers; therefore, they did not need permanent **shelter**. They chose the cave primarily as a shelter from the elements and predatory animals. However, shelters soon began to serve another function. A shelter became a place where food could be stored, weapons built, a fire kept burning, and most important, a place where children could be raised safely.

Early people had to use the few materials available to them to build shelters. Tools were mostly made from crudely chipped stone. There were no means of transporting stone or timber great distances.

Some caves appear to have housed an organized life. The earth was piled into hard mounds, perhaps to be used as a base for a bed. Food was stored in **niches** that were hollowed out of the walls. Usually huge stones covered the mouth of the cave; they were probably rolled across the opening at night to protect the cave dwellers from intruders.

The walls of the caves were often decorated with paintings. The paintings depict animals and scenes of hunting, fighting, and dancing. These early paintings were done in rich earth tones. It is believed that the paintings were used as a form of magic. The hunter may have felt that if he painted the animal, he would have some sort of power over it.

In addition to caves, people carved their homes from solid rock in numerous regions. In central Turkey are the spectacular Cones of Cappadocia. Here man and nature combined to produce a wondrous landscape of natural cones and **minarets** sculpted by erosion, then hollowed into shelter. Cappadocians carved entire cities, one to a depth of 265 feet and another to the depth of a 16-story skyscraper.

**Vocabulary**
cave
minaret
niche
shelter

CAVES
**Knowledge**

Name some of the crude tools used by primitive people.

CAVES
**Application**

Report how the cave people's tools were used for construction and other tasks.

CAVES
**Analysis**

Develop a list of caves. Put those that are alike in some way together. Label these groups. Locate the caves you listed on a map. Color code the location of similar caves.

CAVES
**Evaluation**

List five reasons people stopped living in caves. Determine which of these you believe is the most important. Share this belief and your reasons with the class by developing an original and unique presentation.

**ACTIVITIES**

Task cards are based on Bloom's Taxonomy of Cognitive Objectives. The graduated size of the cards relates to the expanded thinking levels.

CAVES
**Synthesis**

Create a series of articles for a newspaper based on what the cave people ate, their clothing, their art, and any other information you have gathered.

CAVES
**Knowledge**

Make models, dioramas, or draw pictures of caves found on different continents.

CAVES
**Application**

Collect pictures of caves. Explain which of these might be suitable to live in and what makes them suitable or unsuitable for habitation.

CAVES
**Analysis**

What artifacts might be found in caves? How are these artifacts different from other artifacts of early people? Why would these differences exist?

CAVES
**Evaluation**

Evaluate pyramids, castles, mausoleums and an average house in your community according to comfort, durability, beauty, and appropriateness for purpose. Provide reasons for your judgments.

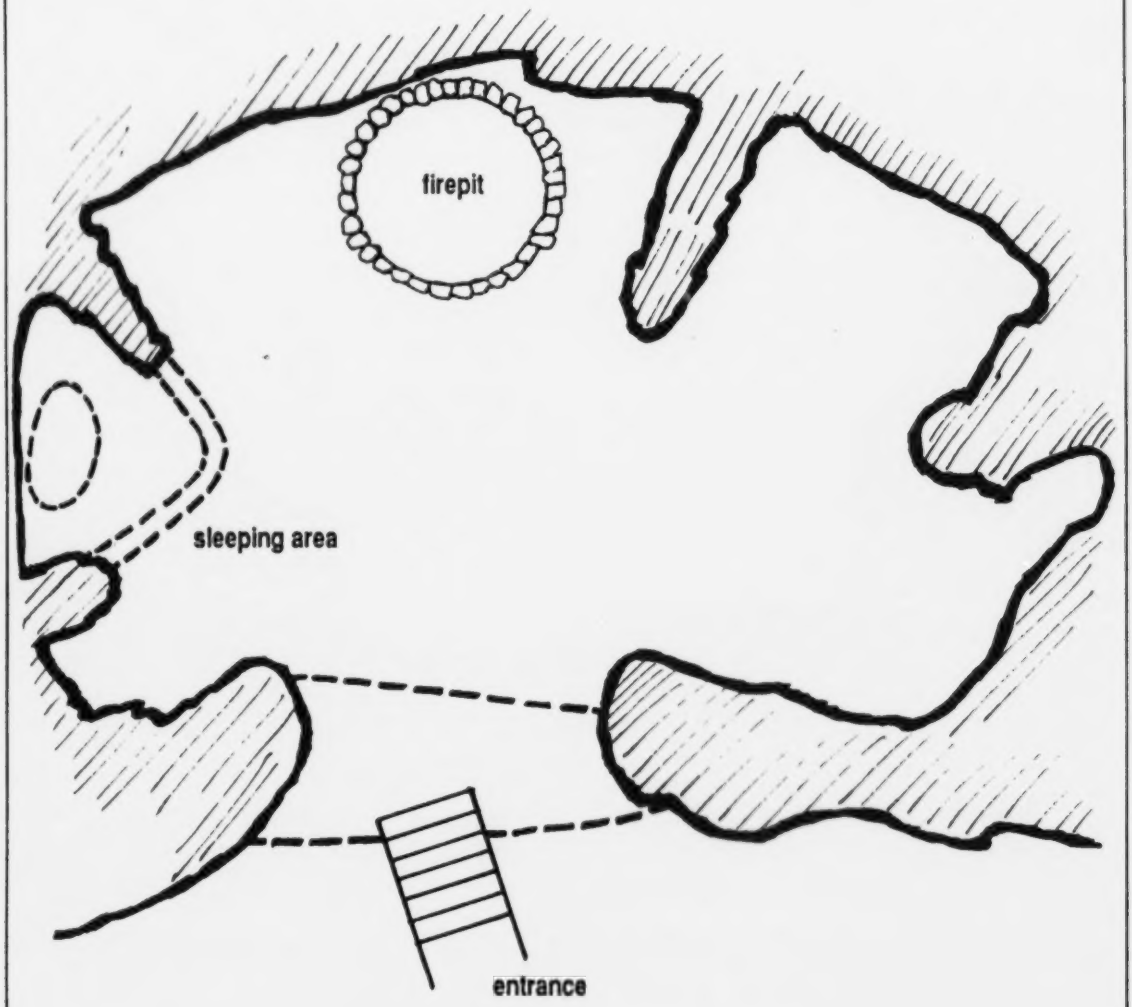
**ACTIVITIES**

Task cards are based on Bloom's Taxonomy of Cognitive Objectives. The graduated size of the cards relates to the expanded thinking levels.

CAVES
**Synthesis**

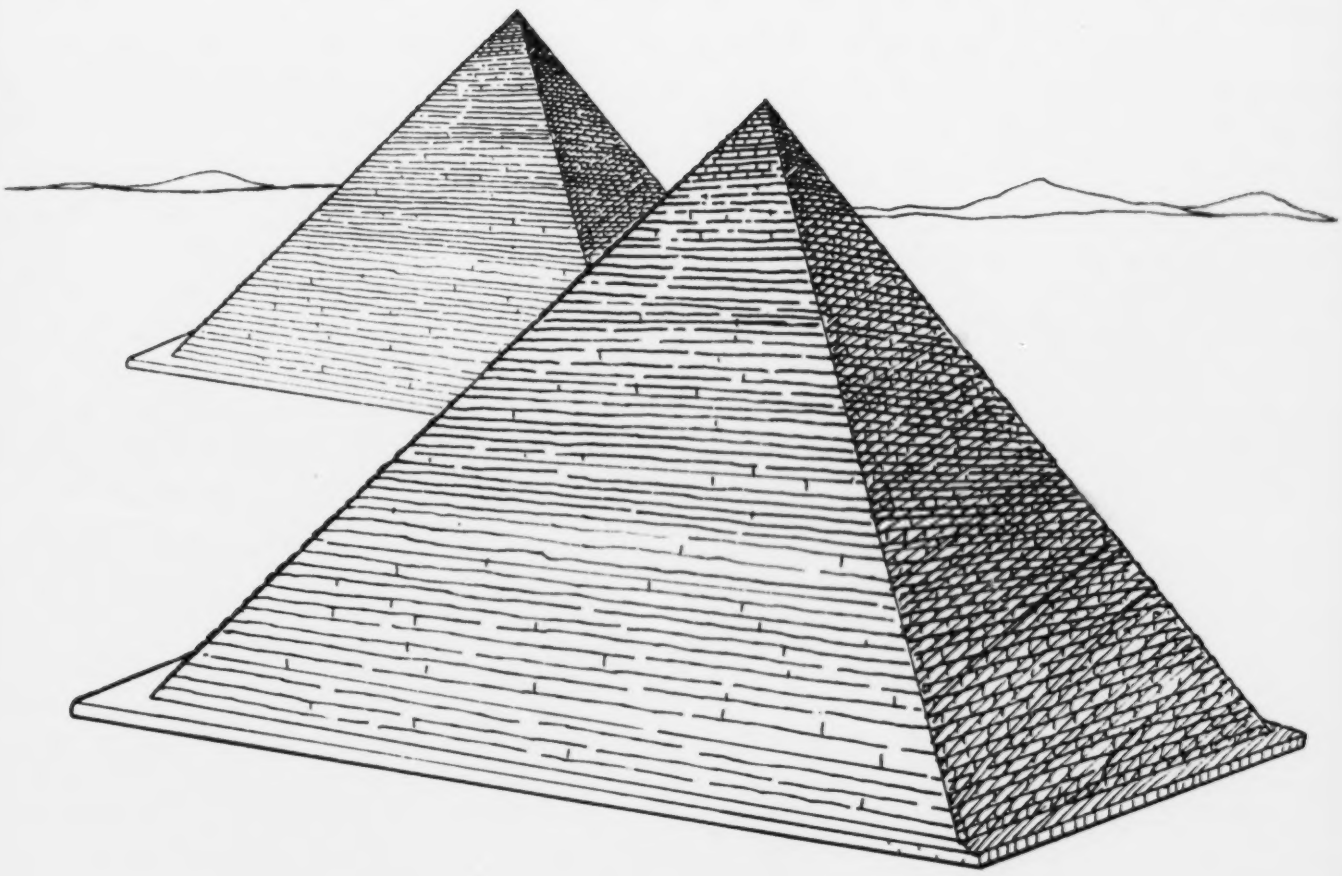
Design a modern adaptation of a simple cave:
(a) for industry,
(b) for pleasure.

Explain each adaptation and list at least five advantages and disadvantages of caves to work in or use for recreation.




**FLOOR PLAN OF A CAVE**

adapted from *Shelter,* published by Shelter Publications



# PYRAMIDS

# PYRAMIDS

## BACKGROUND INFORMATION

Thousands of years have passed since Egyptian workers erected massive stone structures, but their architecture remains as a tribute to their remarkable skill. For the Egyptians life on earth was short, so they built their homes of mud. Life after death was eternal and for that reason their two most important architectural concerns were tombs and temples.

## TOMBS

**Mastabas:** The earliest pharaohs were buried in underground chambers. Above the chamber a solid boxlike structure called a **mastaba** was built. These tombs were used to preserve the **mummy** from damage and to ensure the well-being of the spirit. When Egyptians died, they had buried with them all those things that they thought they would need in the next life. Since the kings and queens had more provisions and goods than ordinary people, storage rooms had to be provided. Some of these were built inside the mastaba. Around the mastaba were small tombs for the servants who accompanied the early kings and queens into their new life.

**Step Pyramids:** The first **pyramid** was built for King Zoser in 2660 B.C. It was designed by the architect Imhotep—Chief of all the works of the King of Upper and Lower Egypt. Imhotep used stone for the first time. He began by building a simple mastaba that was covered by a mass of masonry built in four steps. However, this tomb did not suit King Zoser. Finally a much larger, stepped pyramid was built with six steps, rising to a total height of 200 feet.

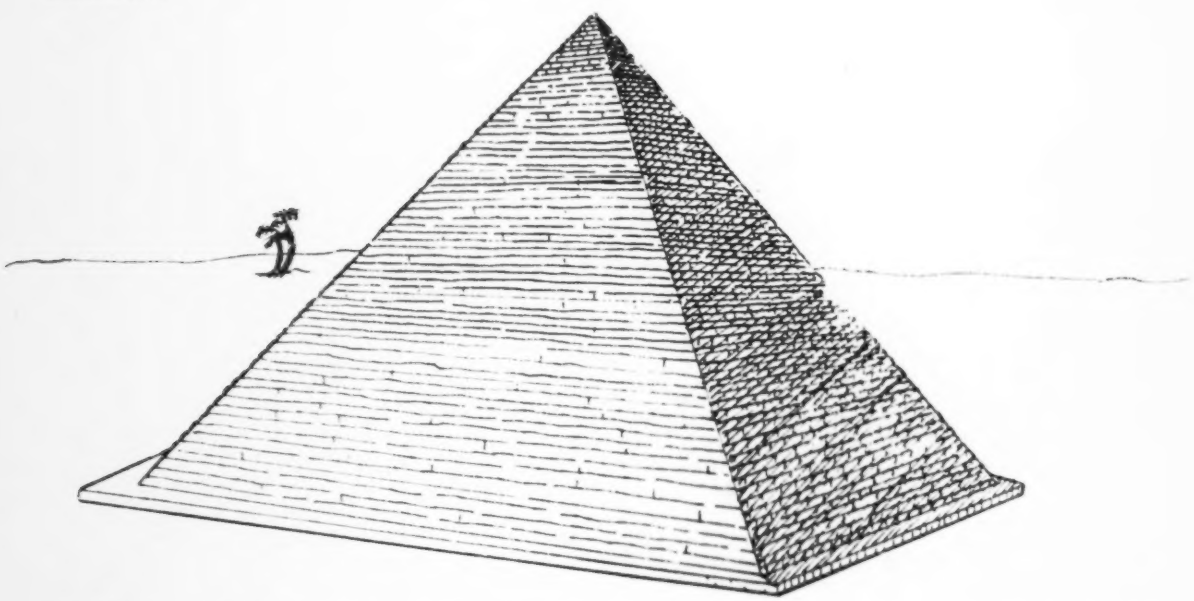
**The Great Pyramid:** Over a hundred pyramids were built near the Nile River by Egyptian rulers, but the largest is the one built by King Cheops. To date it is the largest stone building in the world.

The king for whom this tomb was built ruled Egypt from about 2592 B.C. to 2569 B.C. Cheops's pyramid stands nearly 500 feet high and is over 750 feet long on each side at the base. The

outside of the pyramid appears as brownish blocks. Originally these blocks were covered by a layer of white **limestone** that was highly polished. The limestone gave the surface a smooth and gleaming look from top to bottom.

The Great Pyramid contains two interior chambers and one underground chamber. The topmost chamber was for the king's mummy. To make sure that the weight of the stone above would not crush the room in which the mummy lay, Cheops had five ceilings of stone built, one above the other, with a space above each ceiling and then a slanting ceiling above them all. The two lines slanting upward from his room to the sides are small air passages.

The room underneath his own was for the queen and the one under that, in the cellar or foundation of the pyramid, was perhaps for nobody. It is believed that this room was intended to fool someone who might try to steal the mummies. Cheops arranged to have all the passageways filled with stone after his burial. He also had the entrance covered. Cheops figured that if someone did find the entrance and began to dig, a straight passageway leading to the empty cellar room would prevent the intruder from discovering the king's and queen's chambers.



NOTE: For an excellent description of how a pyramid is built, read *Pyramid* by David Macaulay.

**Temples:** Most of the Egyptian temples were built in the same way: (1) There was an avenue of **sphinxes** leading to the temple. (2) Each temple was dignified by a pair of **obelisks** at its entrance, varying in height from 70 to 105 feet. These were colossal monoliths—single blocks of granite—cut into four-sided tapering pillars with triangular-shaped tops. They were covered with **hieroglyphics** that recorded the triumphs and achievements of the pharaohs. To quarry, transport and place one of these tremendous stones on its foundation was a remarkable feat of engineering. The largest Egyptian obelisk in existence, now standing in the Piazza of St. John Lateran in Rome, weighs about 450 tons. (3) The gateway to the temple consisted of two huge towers called **pylons**. The pylon walls slant inward, and if they went higher they would meet like a pyramid. It is thought that the old astrologers read the stars from the top of the pylons. (4) Behind the gateway was a courtyard, and behind that was a hall of columns called a **hypostyle**. Beyond the hypostyle an inner hall led to the sanctuary where the gods dwelt. Surrounding the sanctuary were storerooms for the possessions of the gods.

NOTE: For a detailed illustration of a typical temple, see *The Buildings of Ancient Egypt* by Helen and Richard Leacroft.

**Vocabulary**

hieroglyphics
mastaba
mummy
pylon
pyramid
obelisk
sphinx
hypostyle
limestone

PYRAMIDS
**Knowledge**

Read *Pyramid* by David Macaulay. Describe your impressions of the people who built the pyramids.

PYRAMIDS
**Application**

Construct three pyramids using different kinds of building materials. Take notes on the steps you use to create each structure. Rewrite your notes as instructions for building a pyramid.

PYRAMIDS
**Analysis**

Compare an Egyptian column to a Greek column. Illustrate your findings by designing an illustrated poster and include a chart that lists similarities and differences. Explain why you think these similarities and differences exist.

PYRAMIDS
**Evaluation**

Develop five criteria based on the purpose of pyramids. Evaluate three specific pyramids according to these criteria and support your evaluation with your reasons.

**ACTIVITIES**

Task cards are based on Bloom's Taxonomy of Cognitive Objectives. The graduated size of the cards relates to the expanded thinking levels.

PYRAMIDS
**Synthesis**

If you were to spend most of your life working on one project (such as building a pyramid), what would that project be? Write a story describing the project and your reasons for devoting your life to it.

PYRAMIDS
**Knowledge**

Define each of the following words and explain how each was used: dolerite, portcullis, sarcophagus, casing blocks, capstone, cove blocks.

PYRAMIDS
**Application**

Build a scale model of a specific pyramid. Label the parts of the pyramid and explain where the real one is located.

PYRAMIDS
**Analysis**

Compare the building materials and construction techniques of a modern skyscraper to those of pyramids. Explain why the differences and similarities exist and how they are related to available technology.

PYRAMIDS
**Evaluation**

How important are the pyramids to our knowledge of the ancient Egyptians and the way they lived? Support your judgment with evidence or reasoning.

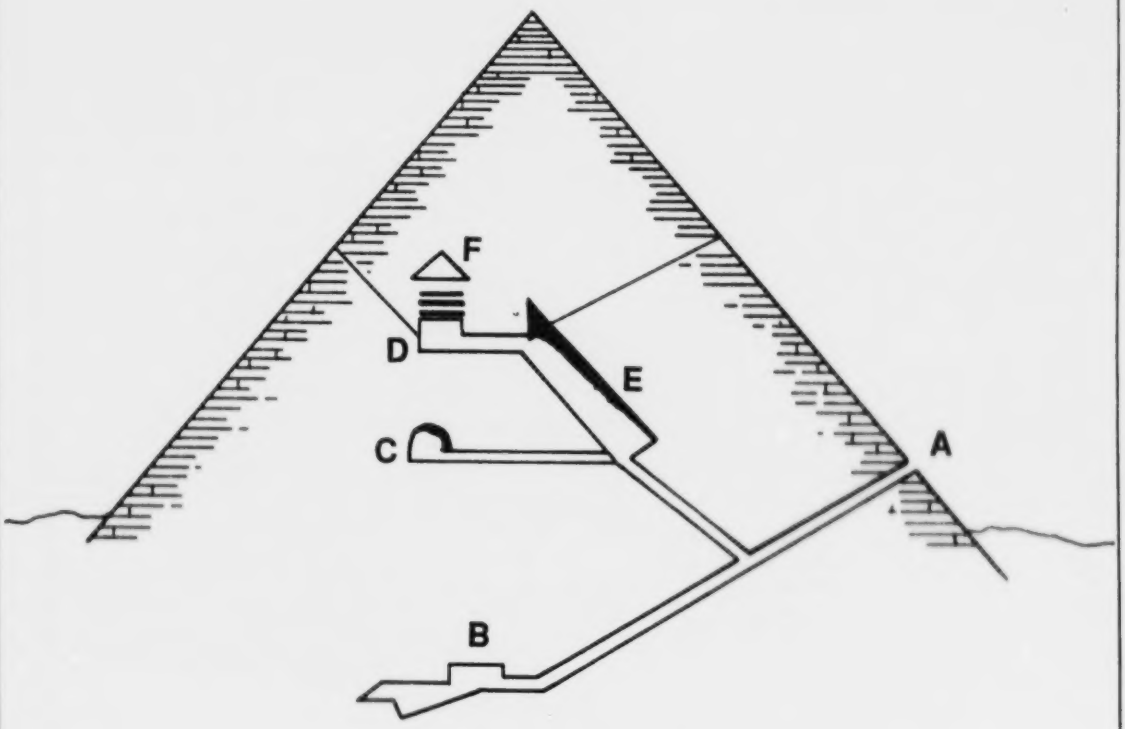
**ACTIVITIES**

Task cards are based on Bloom's Taxonomy of Cognitive Objectives. The graduated size of the cards relates to the expanded thinking levels.

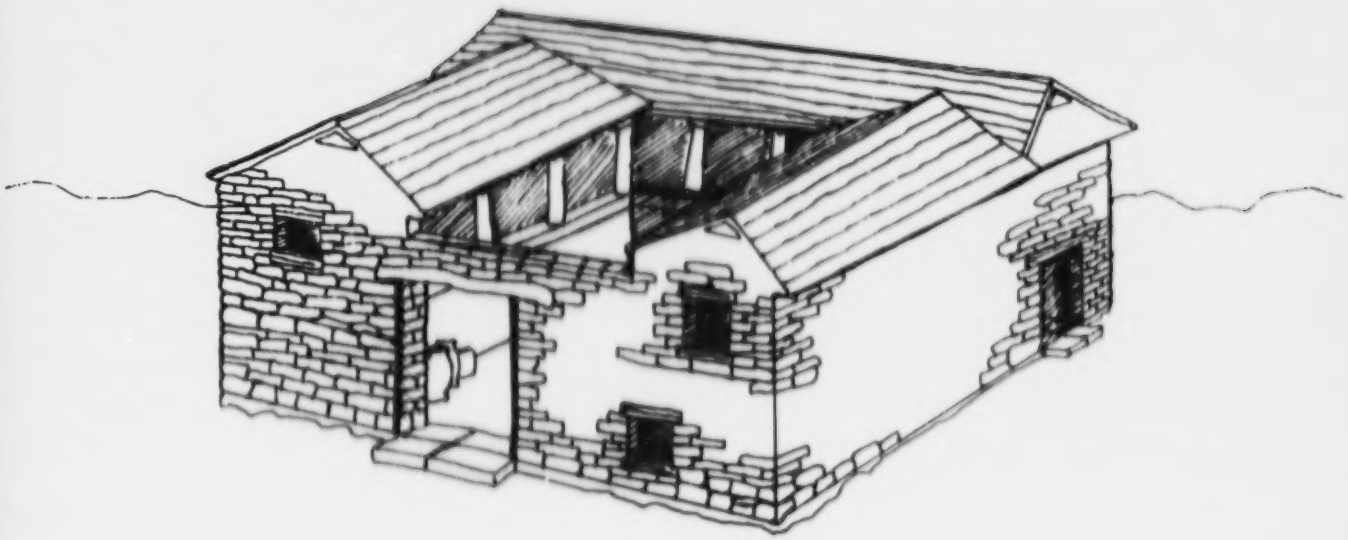
PYRAMIDS
**Synthesis**

Design a modern pyramid for a ruler of the 20th or 21st century.

## CUT-AWAY ELEVATION OF THE GREAT PYRAMID




**A**– Entrance
**B**– First Burial Chamber
**C**– Second Burial Chamber
**D**– Cheops's Burial Chamber
**E**– Grand Gallery
**F**– "Relieving" Chambers



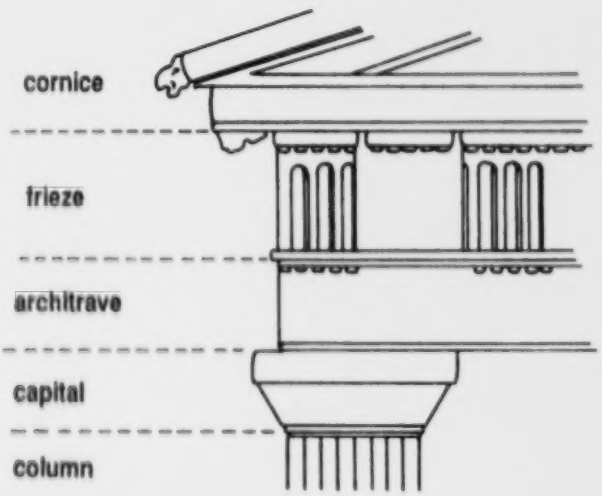
**HOUSE OF ANCIENT GREECE**

# HOUSE OF ANCIENT GREECE

## BACKGROUND INFORMATION

The people of ancient Greece raised the art of designing buildings to its loftiest heights. Greek architecture was based on **post-and-lintel** construction. Under the Greeks the simple post became an elegant **column**. Each column was composed of a base, shaft, and **capital**, the uppermost portion.

The lintel became more sophisticated too. Called an **entablature**, it consisted of three distinct parts—the **architrave**, the part that actually rested upon the column; the **cornice**, the projecting topmost section; and the **frieze**, the usually decorative part between the two.




## ORDERS OF ARCHITECTURE

During the early part of the sixth century B.C., the Greeks built magnificent temples of stone. An abundance of marble, the ideal building stone, was found in the mountains of Greece. Hard enough to weather Greece's moderate climate and soft enough to be carved, this stone was perfect material for the craftsman to work with.

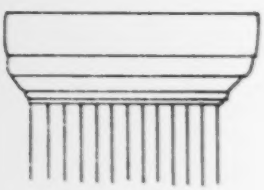
The structures that appeared differed from region to region, giving rise to distinct orders* of architecture.

DORIC ORDER: The **Doric Order** originated in the lands occupied by the Dorians. This column expressed strength and simplicity. The capital was uncluttered, having three to five narrow horizontal bands topped by a bowl-shaped molding upon which rested a square slab called an **abacus**. The best example of Doric architecture is the Temple of Zeus at Olympia.

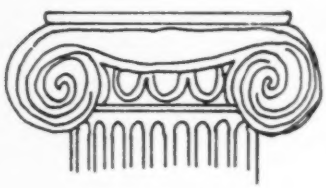
IONIC ORDER: Originating on the coast of Asia Minor, the **Ionic Order** was taller and more slender than the Doric. It consisted of a rectangular plate, each end of which was coiled like a **scroll** into spirals called **volutes**. The plate was topped by a shallow abacus. An example of this type of architecture is the Temple of Artemis at Ephesus.

CORINTHIAN ORDER: The **Corinthian Order** was the most elaborate of the three. The shaft was **fluted** and the capital took the shape of an inverted bell. Rising up the sides from the bottom of the bell were two overlapping rows of **acanthus leaves** carved in **relief**.

*An order refers to the type of column used and the kind of entablature it supports.



DORIC



IONIC

CORINTHIAN

**THE GREEK HOUSE**

The focus of the typical Greek house was the open courtyard. The courtyard was usually cobbled and had an altar to the household god in the middle. Sometimes there was a cistern underneath the courtyard to store rainwater.

To the north of the courtyard, on the ground floor, was a long **portico**, behind which were the working quarters. Included in the working quarters were rooms for cooking, weaving, and bathing. A special room was set up for pressing the oil from olives. The oil, which was used for cooking and also in lamps, was stored in large jars.

The **andiron** or main room opened off the courtyard. This room was used for dining and entertaining. In the evening the host would receive his guests in the andiron—offering them couches with cushions to lie on. Small, three-legged tables were set beside the couches. After the meal was served, the tables were removed and entertainment was provided—sometimes by professional dancers. The women of the house remained in their own quarters while male guests were in the house. The sleeping quarters were located on the upper floor of the house and could be reached by a wooden staircase that led from the open courtyard.

**Vocabulary**

abacus
andiron
capital
cornice
frieze
post-and-lintel
Doric order
Ionic Order
Corinthian Order
acanthus leaves
architrave
column
fluted
portico
relief
entablature
volute
scroll

HOUSE OF ANCIENT GREECE
**Knowledge**

Describe how each of these materials was used in the buildings of Ancient Greece: marble, terracotta, bronze, mud, reeds.

HOUSE OF ANCIENT GREECE

**Evaluation**
Develop at least five criteria that are based on knowledge of Greek architecture and personal preference. Evaluate the orders of Greek architecture according to these criteria.

HOUSE OF ANCIENT GREECE
**Application**

Collect pictures from magazines of post-and-lintel construction. Explain the advantages and disadvantages of this type of construction.

**ACTIVITIES**

Task cards are based on Bloom's Taxonomy of Cognitive Objectives. The graduated size of the cards relates to the expanded thinking levels.

HOUSE OF ANCIENT GREECE
**Analysis**

Compare the Greek column to the North American Indian totem pole. List the similarities and differences. Why do these similarities and differences exist?

HOUSE OF ANCIENT GREECE
**Synthesis**

Design a Greek house, including suitable columns and structure. Keep in mind the Greeks' desire to express strength through their architecture.

HOUSE OF ANCIENT GREECE
**Knowledge**

Explain how the Greeks took advantage of optical illusion in building the Parthenon.

HOUSE OF ANCIENT GREECE
**Application**

Construct a model of a building that incorporates post-and-lintel construction. Include a detachable roof with your model.

HOUSE OF ANCIENT GREECE

**Analysis**
List the primary rooms and their functions in the house of ancient Greece and in your house or apartment. Prepare a blueprint design that illustrates the differences and similarities between the two houses. Explain the reasons for the similarities and the differences.

HOUSE OF ANCIENT GREECE
**Evaluation**

For the Greeks, beauty was an essential part of the design of a building. Using a public building in your community, decide how important beauty was to the architect of the building. Explain why you believe as you do and how important you believe beauty should be in designing buildings.

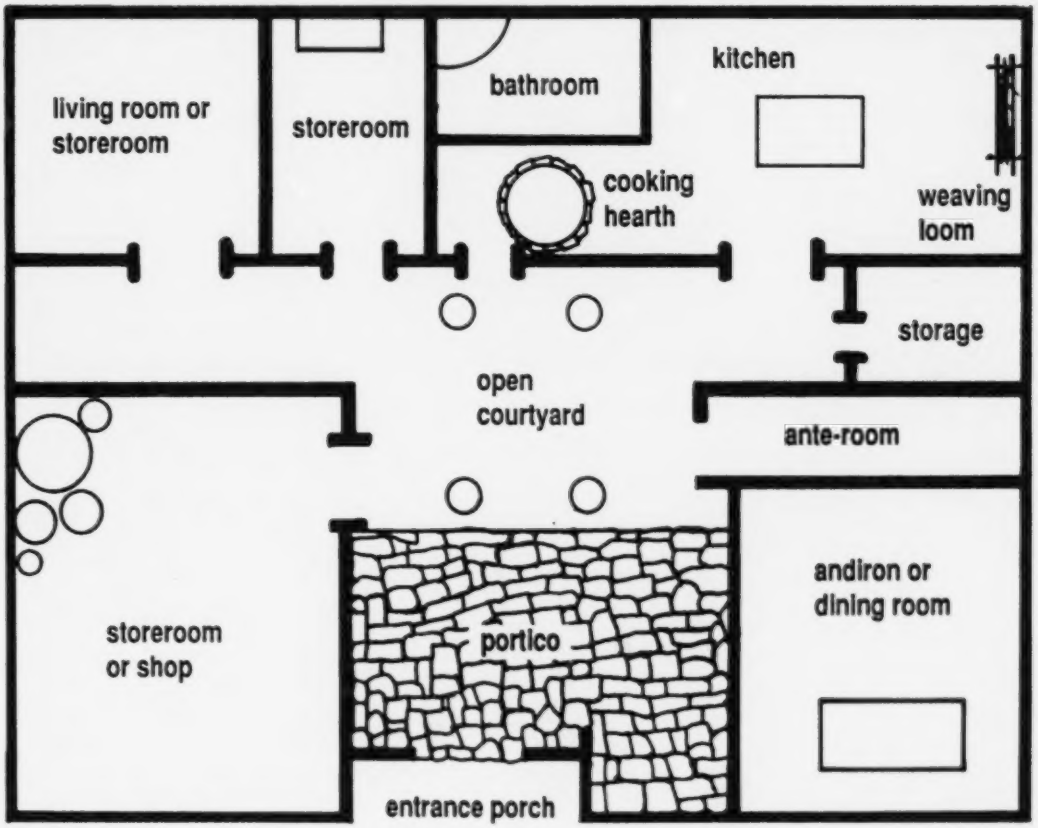
**ACTIVITIES**

Task cards are based on Bloom's Taxonomy of Cognitive Objectives. The graduated size of the cards relates to the expanded thinking levels.

HOUSE OF ANCIENT GREECE

**Synthesis**
Study the floor plan of the house of ancient Greece. Imagine that you are a Greek architect who wants to initiate a major innovation in the design of Greek homes. What would your major change be? Illustrate it by drawing a floor plan. Why would this change benefit your client?

## HOUSE OF ANCIENT GREECE
## GROUND FLOOR PLAN



## CASTLES

33

# CASTLES

## BACKGROUND INFORMATION

Approximately a thousand years ago, small areas (like counties or states) in Western Europe were ruled by nobles. Nobles feared attack by other nobles so each built a structure that was both a home and a fort. This fortified dwelling place, a private fortress of a noble or a king, was called a **castle**.

## MOTTE-AND-BAILEY CASTLES

The first **Norman** castles were called motte-and-bailey castles. After choosing a suitable site the lord would order the local people to raise a huge mound of earth by digging a wide circular ditch and throwing the earth into the middle. This mound, or **motte**, was flattened on the top and there, at the summit, a strong fence or palisade was erected. Inside the fence, a wooden tower (**keep**) was put up to serve as the lord's dwelling place and the last stronghold.

Beyond the mound was a good-sized yard or base-court, called the **bailey**, which was surrounded by another ditch joined to the ditch around the motte. The purpose of the bailey was to provide outer defenses for the tower on the mound, as well as space for stables, barns, and storerooms.

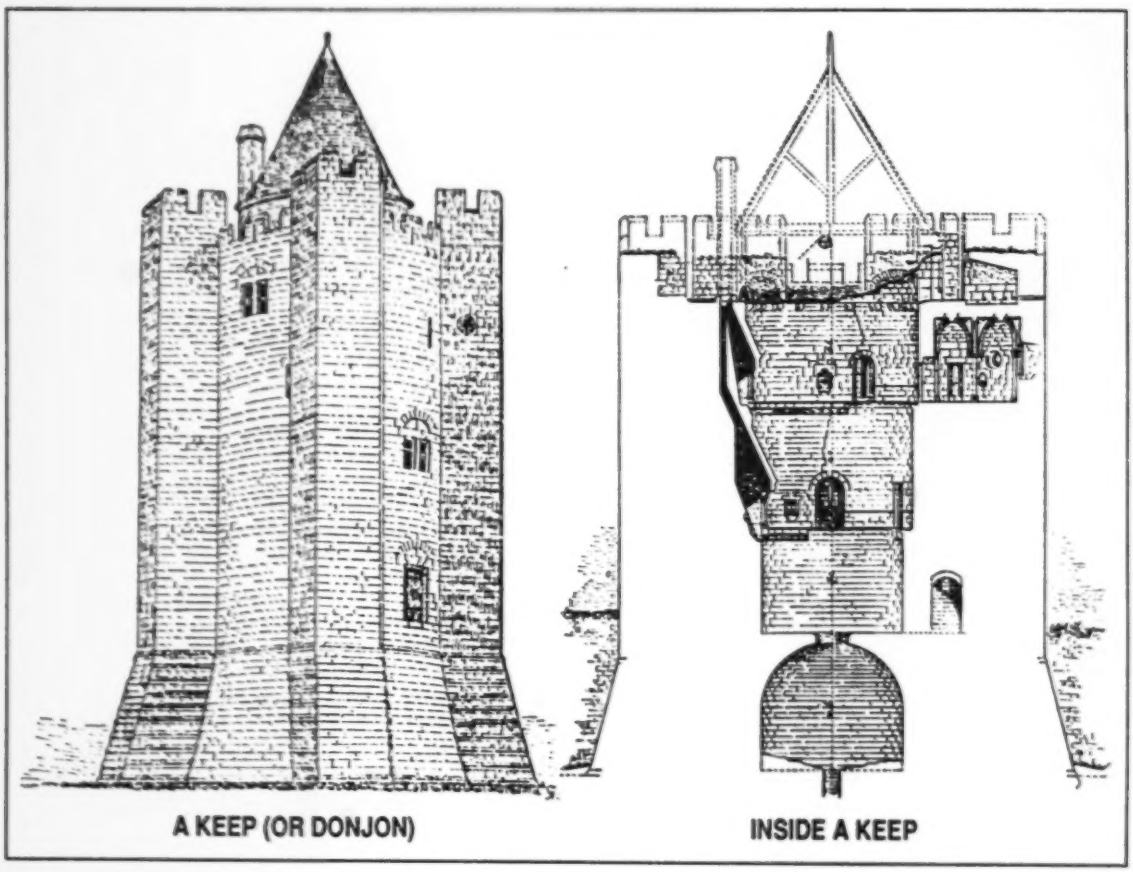
Whenever possible, the castle was built close to a river or stream, which could add to the defenses and supply water to the ditches. Where there was no stream, a dry **moat** was constructed.

These first castles were not very strong. Actually they were no more than wooden towers set on top of earth mounds surrounded by ditches and fences.

battlements, and an unusual feature was the addition of four domed turrets at the corners, three of them square and one round.

THE SQUARE KEEP: The reign of Henry II (1154–1189) marked the era of the square keep. These huge towers survived better than almost any other buildings ever raised in Britain.

The square keep stood solidly on level ground. The walls were splayed out at the base to form a strong **plinth**. This added strength to the tower and caused stones and liquids to bounce or splash upon attackers. The walls jutted out into **buttresses** at each corner. These buttresses extended beyond the tops of the walls to make four turrets. The walls were made of flint, rubble, and stones mixed with mortar to make a mass that set as hard as rock.



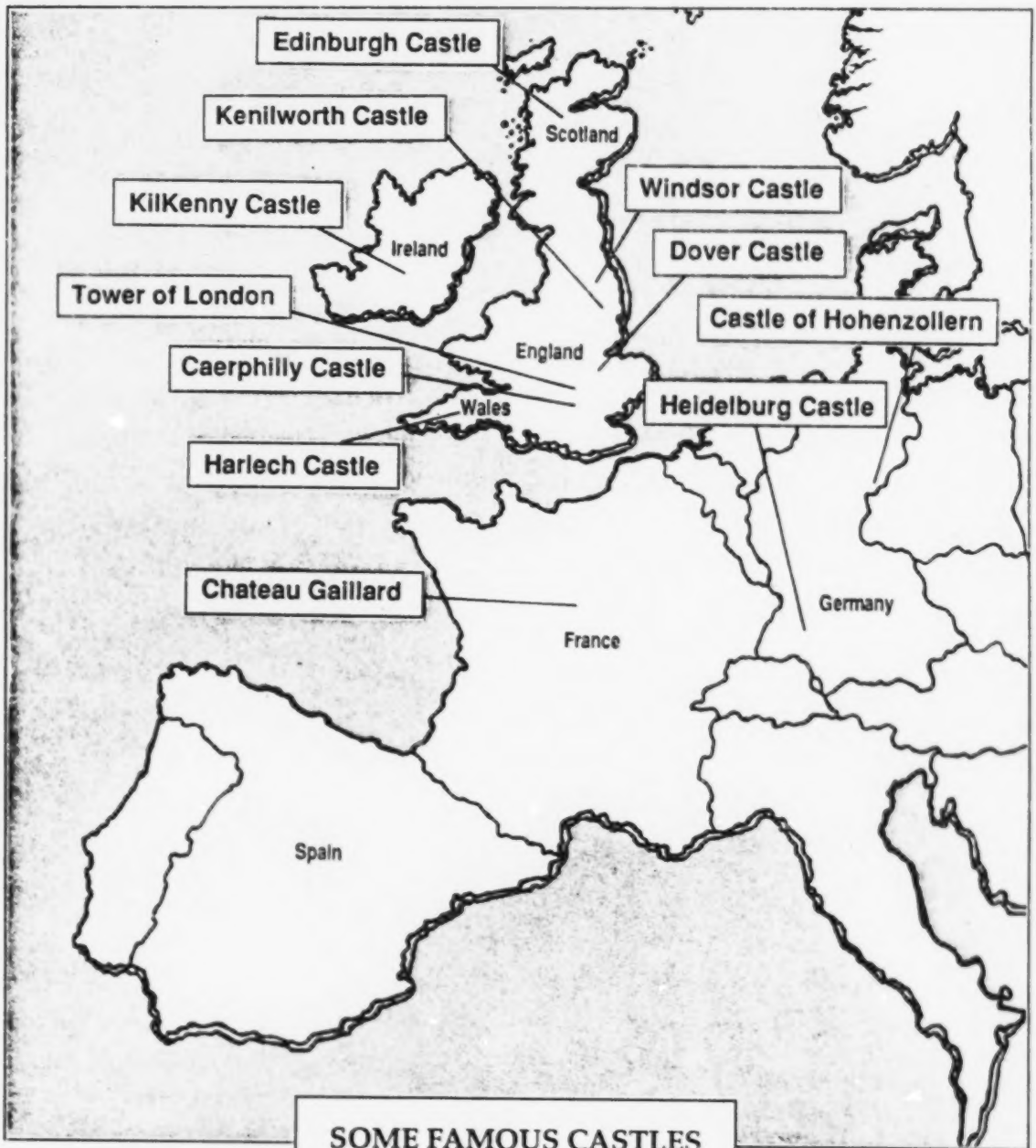
A KEEP (OR DONJON) INSIDE A KEEP

The keep could not be entered at ground level so one had to ascend a flight of steps, guarded by another outer tower. The steps led to an entrance room (the vestibule) and on to the **portcullis**. The two principal rooms of the keep were the great hall and the **solar**. These rooms were covered by a **high-pitched** wooden roof, hidden from the outside by the main wall. The Great Hall was a lofty room that was white-washed to reflect light from the windows. The windows were small and narrow; however, each was shaped like a funnel to spread light into the hall. On one side of the hall was an opening leading into a narrow passage, at the end of which was a latrine or lavatory. The solar was the private room of the lord. The walls were painted bright colors and there was a large fireplace with a stone **canopy** to lead the smoke into several vents cut through the wall. This room was used for family gatherings and sleeping quarters.

Square keeps usually had a spiral staircase that led from the main room to the top of a pillar. At the top of the pillar was a passage cut in the walls, with loopholes on the outer side from which archers could fire down at the enemy. This passage was called the mural gallery. At the top of the keep was a walkway along the battlements. The staircase also led to a basement, where provisions were stored.

## Vocabulary

| | |
|---|---|
| bailey | buttress |
| canopy | castle |
| keep | hall or great hall |
| high-pitched | moat |
| Norman | plinth |
| portcullis | solar |
| motte | |




SOME FAMOUS CASTLES

CASTLES
**Knowledge**

Define these words: embrasure, machicolations, merlons, motte, postern.

CASTLES
**Application**

Why would the designer of a castle be interested in topography? Provide and explain at least five reasons for this interest.

CASTLES
**Analysis**

Compare three fairy tales with castles in them to three that do not include castles. What general statement can you make about fairy tales that have castles in them? What makes you think the statement is true?

CASTLES
**Evaluation**

List five things that you believe are important in a house. Evaluate a castle based on these standards. Why would or would you not enjoy living in a castle all the time?

**ACTIVITIES**

Task cards are based on Bloom's Taxonomy of Cognitive Objectives. The graduated size of the cards relates to the expanded thinking levels.

CASTLES
**Synthesis**

Transform your bedroom into a tower. Design a plan for your tower. Include colors, placement of furniture, and a secret entrance.

CASTLES
**Knowledge**

Who lives in castles today? Why do they live in castles?

CASTLES
**Application**

Construct a sand castle model of a motte-and-bailey. Include a drawbridge and a moat. When you are finished, reflect on your experience of creating a castle. Develop a list of instructions for someone else to build a similar castle.

CASTLES
**Analysis**

Research the Harlech Castle in Wales. Compare it to a castle in another country. Develop a chart that shows similarities and differences and reasons for these similarities and differences.

CASTLES
**Evaluation**

How important were castles to the way of life during the era in which many of them were built? Why were or were they not important? In what ways were they important? To whom were they important? Why?

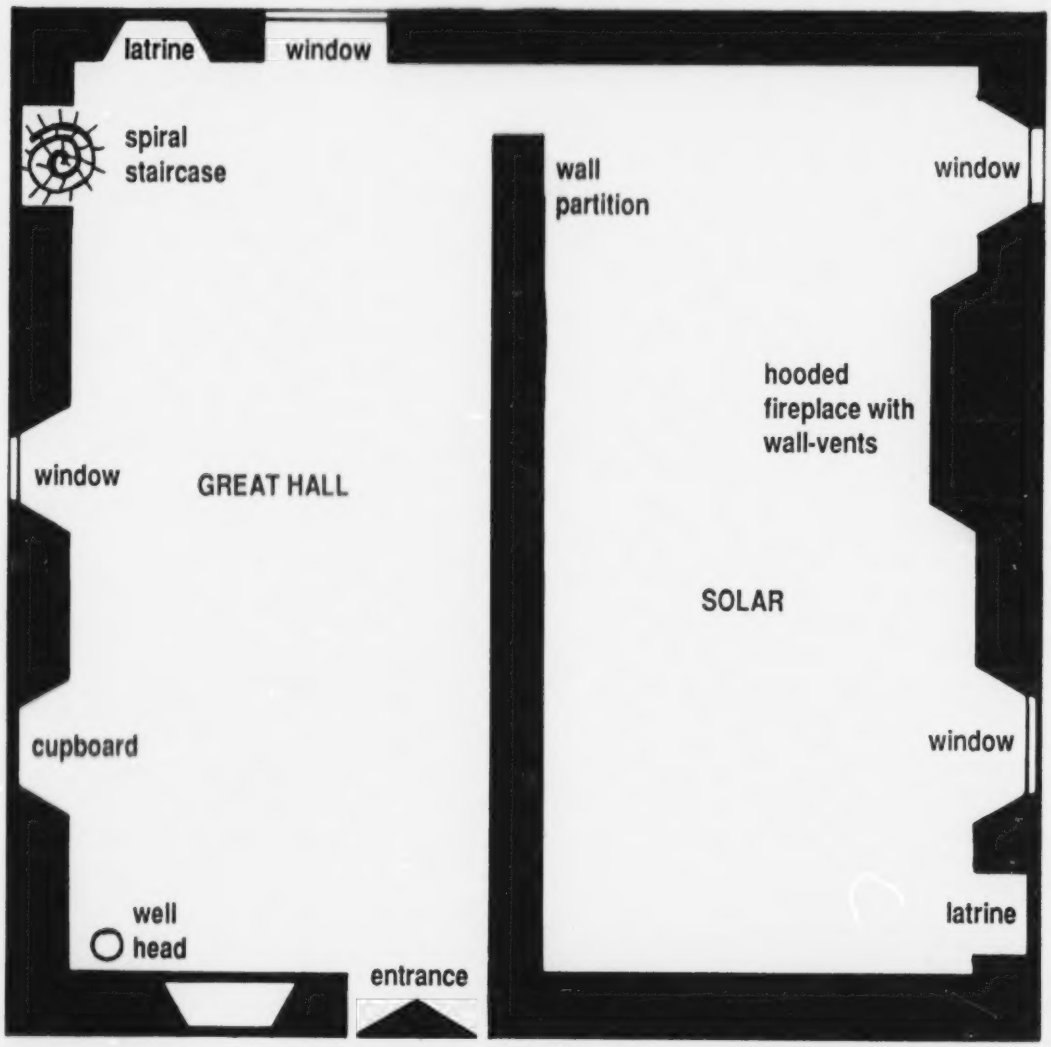
ACTIVITIES

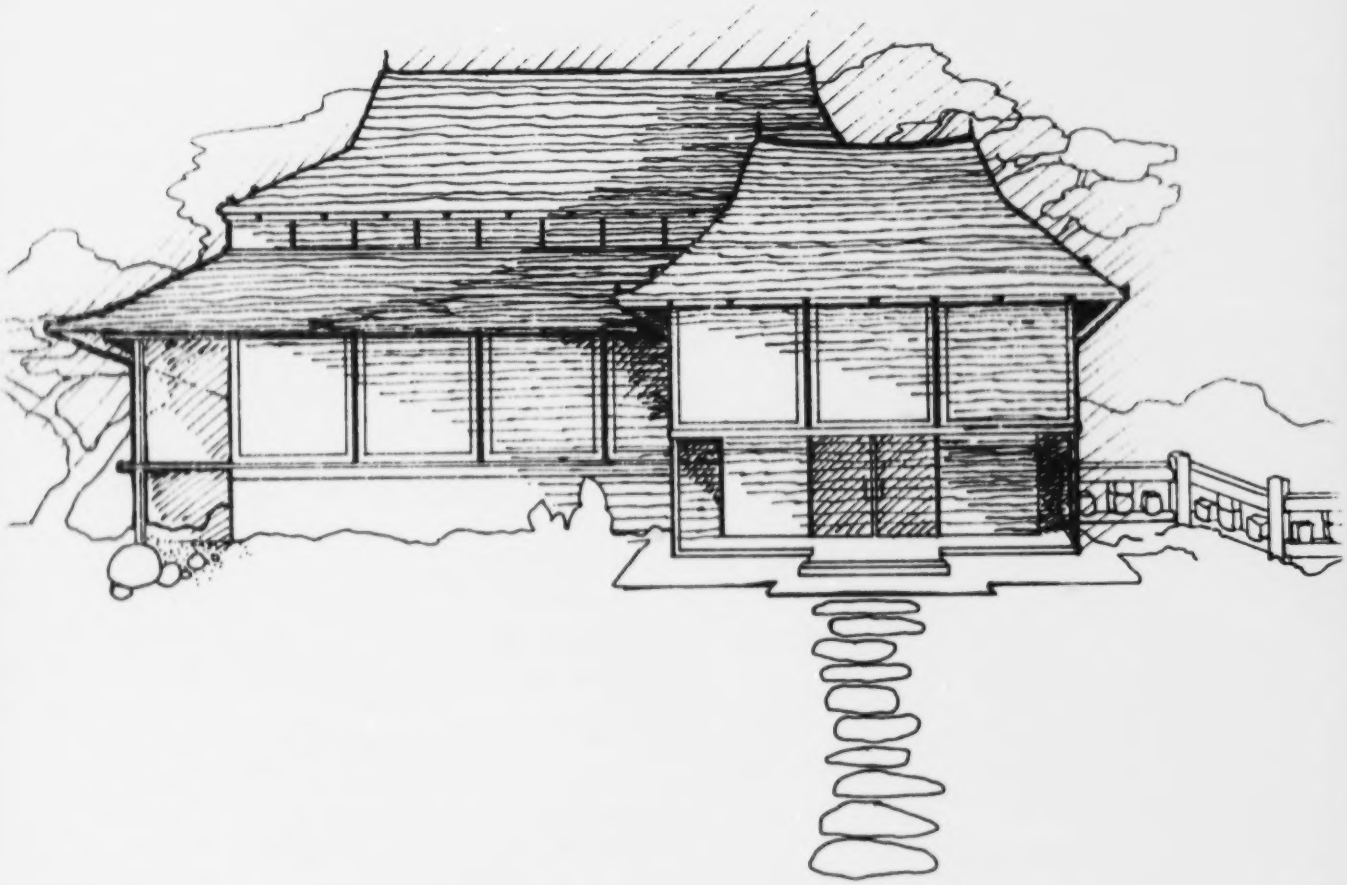
Task cards are based on Bloom's Taxonomy of Cognitive Objectives. The graduated size of the cards relates to the expanded thinking levels.

CASTLES
**Synthesis**

Create your dream castle. Combine the exterior of a traditional castle with the conveniences of modern interior design. Draw a floor plan and the exterior elevation of your castle to scale.

## FLOOR PLAN OF A CASTLE





TRADITIONAL HOUSE OF JAPAN

# TRADITIONAL HOUSE OF JAPAN

**BACKGROUND INFORMATION**

The classic Japanese house is framed in wood with posts supporting beams. It is one or two stories, with a roof covered in tile, thatch, or wood shingles. The foundation is made of large stones set into the ground to support the posts. Most of the walls are sliding ***shoji*** screens. The interior walls are usually ***fusuma*** screen partitions. The floors are thick ***tatami*** mats, approximately 3 feet by 6 feet in size. These mats determine the size of the rooms and the size of the house. Because the *tatami* is soft, one does not wear shoes in a Japanese house. The garden is an important part of the Japanese house. The garden may be small but it is always designed for viewing from indoors. Often there are several small gardens, to be enjoyed from different rooms.

*GENKAN*: The path from the entry gate leads to a sheltered enclosure or entry vestibule called the ***genkan***. The *genkan* consists of a broad step, a platform, and the floor of the house itself. The stepping stone is called ***kutsunugi-ishi*** or "taking-off-shoes" stone. The platform step is called ***shikidai*** and is usually made of carefully selected wood. The *genkan* has sliding exterior doors to close it from the outside.

*TATAMI*: *tatami* mats are always the same dimension—approximately 3 feet by 6 feet. They are a little over 2 inches thick and are made of straw core with a surface finish of woven matting. The sides are usually bound with a narrow strip of black or dark gray fabric. Sometimes these edges are decorated. This type of floor surface offers several advantages for the Japanese home: (1) Cleanliness: removing shoes before entering ensures that little or no dirt is tracked in from the outside. (2) Quiet: stockinged feet are quiet in themselves, and the soft surface of the *tatami* makes movement almost noiseless. (3) Comfort: at night the ***futon*** (bedding) is laid directly on the mats, so the resilience of the mat contributes to comfort. The *tatami* mat is the unit of floor area measurement in a Japanese house. The number of mats used specifies the size of the room. Rooms are always laid out so that mats fit precisely, without cutting. Average-sized rooms usually have an even number of mats.

FUSUMA: The paper-covered *fusuma* separate the interior space in a Japanese house. The *fusuma* rest on a wood surface flush with the top of the *tatami*. Shallow grooves serve as tracks to keep them in place. Above them, a ***kamoi*** 6 feet high also has tracks on the underside. *Fusuma* may be decorated or plain. Their handles are often richly designed. The size of the

*fusuma* depends on the width of the room and is usually the width divided by two or four.

*SHOJI*: In the Japanese house, the *shoji* function as both windows and doors. These sliding exterior wall panels can be opened partially or completely to open the entire house to the garden or to close off a room for privacy.

The classic Japanese *shoji* are made with translucent paper stretched over a wood frame. Sometimes the lower half of the panel can be removed, offering another way to vary the opening. This is a popular variation, for it makes it possible to view the garden while you are seated on the floor.

*ZASHIKI:* The principal room in the Japanese house is the ***zashiki***. This room is used for daily activities, entertaining, eating, and sometimes sleeping. Three of its four walls may be *fusuma* or *shoji*, but the fourth will be the ***tokonoma***.

*TOKONOMA:* The *tokonoma* is the place of honor in the room. It is an **alcove** used for the display of a scroll, beautiful art object, natural object such as a stone, or a simple flower arrangement.

The basic form of the *tokonoma* is well established. The floor is usually higher than the floor of the room. One corner is marked by a specially crafted post, often left in its natural state. The *tokonoma* is situated at one end of a rectangular room, usually on the side next to the exterior wall so that it can be lighted by a window.

*ENGAWA*: The ***engawa*** is a type of porch. It is a narrow platform at the wall line that extends the indoor floor out over the ground. It provides access from the garden. It can also be a place to sit and have tea in summertime. Sometimes the *engawa* is used as a corridor allowing access from room to room. The floor of the *engawa* is wood and therefore is the only place where one can place chairs and a table.

**Vocabulary**

| | | |
|---|---|---|
| alcove | *engawa* | *fusuma* |
| *genkan* | *kamoi* | *shoji* |
| *tatami* | *tokonoma* | *zashiki* |
| *kutsunugi-ishi* | *futon* | *shikidai* |

HOUSE OF JAPAN
**Knowledge**

The *tsuitate* and the *byobu* are traditional Japanese screens. What are they used for?

HOUSE OF JAPAN
**Application**

Design a *kakeziku* (hanging scroll) for the *tokonoma* in a Japanese home. Use a *sumi* brush and paint if they are available.

HOUSE OF JAPAN
**Analysis**

Draw floor plans of a Japanese house and your home or apartment. Compare the entry way, the size and purpose of the rooms, and the use of windows in both houses. Why do differences exist between the two types of houses?

HOUSE OF JAPAN
**Evaluation**

The garden is very important in the Japanese house. Select a room or element of houses in at least two other countries that is important to that culture. Explain why the Japanese garden and the other elements you chose are important to the people within each culture.

**ACTIVITIES**

Task cards are based on Bloom's Taxonomy of Cognitive Objectives. The graduated size of the cards relates to the expanded thinking levels.

HOUSE OF JAPAN
**Synthesis**

Design a Japanese garden, using plants and materials found in your community. Write a poem, paint a picture, or create something else that conveys the essence of the garden.

HOUSE OF JAPAN
**Knowledge**

Collect pictures of Japanese-American style homes. Display them in the form of a book.

HOUSE OF JAPAN
**Application**

Learn about and then construct a diorama of a *tokonoma*. Display a piece of art, a flower arrangement, or an unusual natural object.

HOUSE OF JAPAN
**Analysis**

Survey your community for buildings that include elements of Japanese style or architecture. Explain why these elements are present.

HOUSE OF JAPAN
**Evaluation**

In what ways does the classic Japanese house reflect the culture of the country? How are Japanese houses changing as the culture changes? Why is this so?

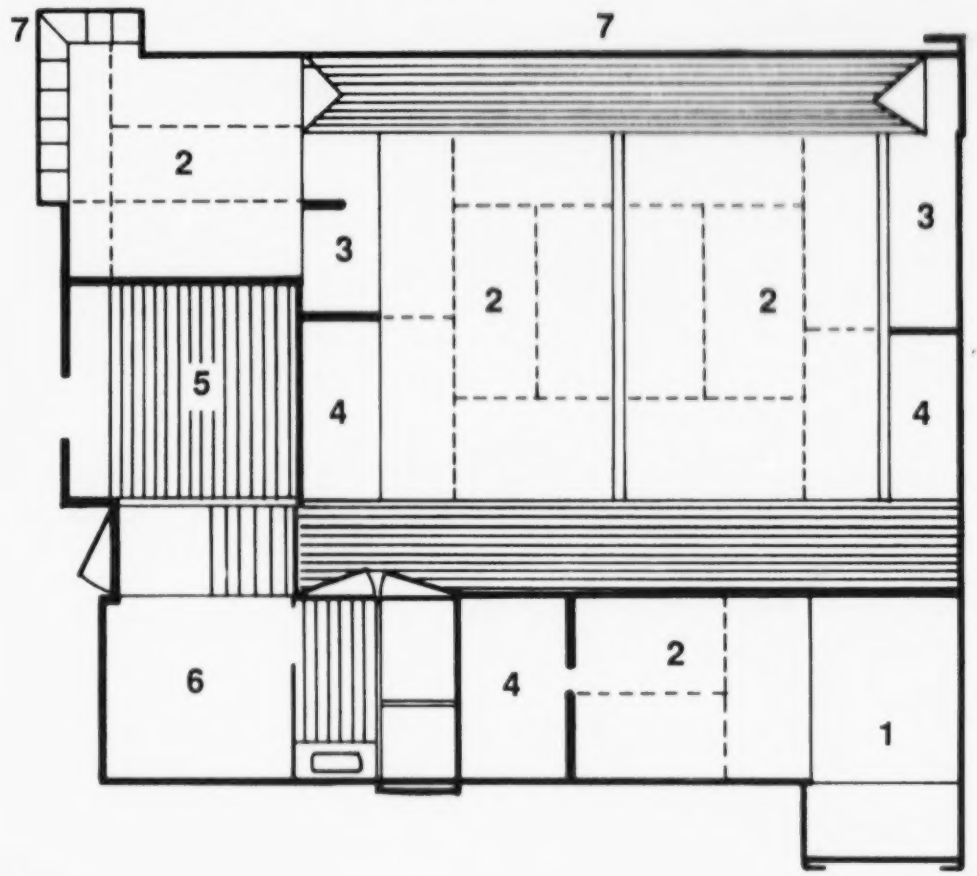
**ACTIVITIES**

Task cards are based on Bloom's Taxonomy of Cognitive Objectives. The graduated size of the cards relates to the expanded thinking levels.

HOUSE OF JAPAN
**Synthesis**

Use graph paper or blueprint paper to design a 10-*tatami* mat room to scale. Include the *tokonoma* and *shoji*. Indicate colors and placement of furniture.

## FLOOR PLAN OF A TRADITIONAL JAPANESE HOUSE




**1.** Entry
**2.** *Tatami* Room
**3.** Alcove
**4.** Closet
**5.** Kitchen
**6.** Bathroom
**7.** Porch

## CREATING A LEARNING CENTER

## CHECKLIST OF MATERIALS FOR THE LEARNING CENTER

- ❑ books
- ❑ filmstrips
- ❑ paper
  - ❑ plain
  - ❑ graph
  - ❑ blueprint

**Designing Tools**
- ❑ pencils
- ❑ marking pens (thick & thin)
- ❑ rulers
- ❑ T–square
- ❑ compasses
- ❑ protractors
- ❑ scissors

**Picture File**
- ❑ caves
- ❑ castles
- ❑ columns
- ❑ pyramids
- ❑ Greek architecture
- ❑ post-and-lintel construction
- ❑ Japanese houses
- ❑ Japanese gardens
- ❑ sample floor plans
- ❑ tombs
- ❑ temples
- ❑ unusual shelters

- ❑ Dictionary of architectural terms (This can be compiled by a student.)

**Construction Materials**
- ❑ wood scraps
- ❑ balsa wood blocks
- ❑ cardboard tubes (all sizes)
- ❑ toothpicks
- ❑ straws
- ❑ pipe cleaners
- ❑ cans (all sizes)
- ❑ spools (all kinds)
- ❑ egg cartons
- ❑ plastic fruit baskets
- ❑ bricks
- ❑ cups (styrofoam/paper)
- ❑ corrugated paper
- ❑ PVC pipe
- ❑ Lincoln Logs
- ❑ Tinker Toys
- ❑ styrofoam packing pieces
- ❑ sand
- ❑ stones
- ❑ cardboard boxes

**Miscellaneous Items**
- ❑ Architectural design magazines
- ❑ Dollhouse furniture
- ❑ Samples of building materials mentioned in this book (e.g., limestone, marble)
- ❑ Related realia (e.g., a *tatami* mat) for a learning center based on a traditional Japanese House

The authors recommend Bellerophon Coloring Books, available from Bellerophon Books, 36 Anacapa St., Santa Barbara, CA 93101:
- ❑ *Ancient Egypt*
- ❑ *Ancient Greece*
- ❑ *Middle Ages*
- ❑ *Japan*
- ❑ *Castles*

## BIBLIOGRAPHY


### CAVES

Beaham and Tanner. *Early People*. Tucson, AZ: Zephyr Press, 1983.

Robbin, Irving. *Building: From Caves to Skyscrapers (A How and Why Wonder Book)*. New York: Wonder Books, 1963.

### PYRAMIDS

Clements, Domin and Tanner. *Ancient Egypt*. Tucson, AZ: Zephyr Press, 1983.

Glubok, Shirley. *The Art of Ancient Egypt*. New York: Atheneum, 1966.

Macaulay, David. *Pyramid*. New York: Houghton Mifflin Co., 1975.

Wahl, Mark. *Mathematical Mystery Tour*. Tucson, AZ: Zephyr Press, 1988.

### ANCIENT GREECE

Clements, Domin and Tanner. *Ancient Greece and Rome*. Tucson, AZ: Zephyr Press, 1983.

### CASTLES

Macaulay, David. *Castle*. New York: Houghton Mifflin Co., 1977.

Moreland, Jennifer. *The Renaissance*. Tucson, AZ: Zephyr Press, 1987.

Tanner, Joey. *Middle Ages*. Tucson, AZ: Zephyr Press, 1983.

### JAPAN

Ishimoto, Tatsuo. *The Japanese House*. New York: Crown Publishers, 1963.

Patzman, Ruth. *Early Japan*. Tucson, AZ: Zephyr Press, 1983.

## GENERAL REFERENCES


Adler, Irving and Ruth. *Houses*. New York: John Day Co., 1964.

Bowood, Richard. *The Story of Houses and Homes*. Wills & Hepworth Ltd., 1963.

Dugan, William. *All About Houses*. New York: Golden Press, 1975.

Giblan, James Cross. *Let There Be Light: A Book About Windows*. New York: Thomas Y. Crowell, 1988.

Macaulay, David. *Unbuilding*. New York: Houghton Mifflin Co., 1980.

Maddex, Diane. *Architects Make Zigzags: Looking At Architecture from A to Z*. Washington, DC: The Preservation Press, 1986.

Rudofsky, Bernard. *Architecture Without Architects*. Garden City, NY: Doubleday & Co., 1964.

Shelter Publications. *Shelter*. Bolinas, CA: Shelter Publications, 1973.

Sullivan, George. *Understanding Architecture*. New York: Frederick Warne & Co., 1971.

Wilson, Forrest. *What It Feels Like To Be a Building*. Washington, DC: The Preservation Press, 1988.

Winters, Nathan B. *Architecture is Elementary*. Layton, UT: Gibbs M. Smith, Inc., 1986.

## GLOSSARY

### CAVES

**cave:** a hollowed out chamber in the earth.

**minaret:** a tower.

**niche:** a recess in a wall.

**shelter:** something that covers, protects, or defends; protection, or place affording protection, as from the elements, danger, etc.: a place of refuge.

### PYRAMIDS

**hieroglyphics:** a system of writing using pictures or symbols.

**hypostyle:** having a roof resting on rows of columns.

**limestone:** a type of rock used by the Egyptians in the construction of the pyramids.

**mastaba:** ancient Egyptian tomb built of mud brick in the shape of a flat-topped rectangular box.

**mummy:** a dead body, wrapped in cloth and preserved from decay by certain chemical preparations.

**obelisk:** a square shaft of stone that tapers to a pyramid-shaped top.

**pylon:** a large gateway to an Egyptian temple.

**pyramid:** a huge structure built to preserve the bodies of Egyptian kings.

**sphinx:** an Egyptian statue depicting a lion's body with the head of a man.

### HOUSE OF ANCIENT GREECE

**abacus:** the square slab on the top of the Doric and Ionic columns.

**acanthus leaves:** the representation of a thistlelike plant carved on the capitals of Corinthian columns.

**andiron:** the main room in the Greek house, used for dining and entertaining.

**architrave:** the section of the entablature that rests on the column.

**capital:** uppermost portion of the column.

**column:** refined post designed by the Greeks.

**cornice:** the topmost section of an entablature.

**Corinthian Order:** a column with a fluted shaft and bell-shaped capital featuring overlapping rows of acanthus leaves.

**Doric order:** a column featuring an uncluttered capital, with three to five narrow horizontal bands topped by an abacus.

**entablature:** the lintel of a Greek column.
**fluted:** having grooves.
**frieze:** the decorative part of the entablature, between the cornice and the architrave.
**Ionic order:** a tall slender column with a rectangular plate, with a volute at each end.
**portico:** a porch in a Greek house.
**post-and-lintel:** a horizontal beam across a space between two supporting columns.
**relief:** an artform in which the image stands out three-dimensionally from the surface.
**scroll:** a roll (as of parchment) for writing a document.
**volute:** a spiral on an Ionic column.

## CASTLES

**bailey:** the area inside the walls of a motte-and-bailey castle.
**buttress:** a projecting structure used for support.
**canopy:** an ornamental rooflike structure.
**castle:** a fortified dwelling place of a noble or a king.
**hall or great hall:** the principal building within a concentric castle.
**high-pitched:** steep.
**keep:** a great tower.
**moat:** a ditch around a castle, usually filled with water.
**motte:** a mound of earth on which the keep of early castles was built.
**Norman:** referring to Normandy, a region of France.
**plinth:** the base of a wall sloping outward.
**portcullis:** a wooden gate, shod with iron and suspended by chains that could be raised or lowered as required.
**solar:** the lord's private room.

## TRADITIONAL HOUSE OF JAPAN

**alcove:** a small recessed section of a room.
***engawa:*** a narrow wooden platform at the wall line, between *shoji* and the rain shutters; a veranda, a porch an open corridor, a balcony . . . (the *engawa* can be any or all of these).
***fusuma:*** sliding interior wall panels.
***futon:*** the firm, compacted-cotton bedding, originally from Japan.
***genkan:*** entry vestibule.

***kamoi:*** a lintel with shallow grooves on the underside that serve as tracks for *fusuma.*

***kutsunugi-ishi:*** literally, a stepping stone used for taking of the shoes.

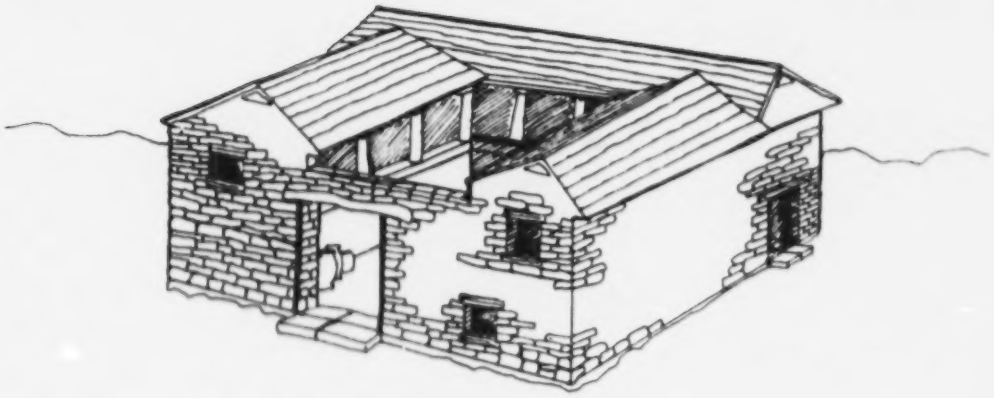
***shikidai:*** the platform inside the *genkan,* made of carefully selected wood.

***shoji:*** paper-covered sliding wall panels.

***tatami:*** straw mats (usually 3 feet by 6 feet and a little over 2 inches thick) used for the floor surface in Japanese houses.

***tokonoma:*** an alcove in the *zashiki* where art treasures, natural objects, or flower arrangements are displayed.

***zashiki:*** principal room in a Japanese house; a kind of "family room."



For a complete line of learning materials that foster whole-brain learning, creative and critical thinking, and self-awareness, send for a free catalog:

**ZEPHYR PRESS**
P.O. Box 13448
Tucson, AZ 85732-3448

## *ADDITIONAL ENRICHING UNITS IN THIS SERIES*

Here are six multidisciplinary units that can fit right into your social studies curriculum. You can facilitate self-directed learning and critical and creative thinking with the ideas and activities in each book.

Each book includes up to 100 reproducible task cards—great for cooperative learning. The tasks are based on Bloom's Taxonomy of Thinking Skills and provide rich learning experiences.

Each unit requires research and reporting. Since most books contain five subtopics, each subtopic may be pursued independently or combined into one multi-dimensional unit. Each book includes—

- In-depth background information for the teacher
- Up to 100 reproducible task cards
- Comprehensive list of reference materials & complete bibliography
- Discussion questions
- Vocabulary expansion list

***PHILOSOPHERS***
by Patton and Madigan (revised 1989)
Broaden your students' horizons by presenting some of the world's great philosophers—Buddha, Socrates, Thoreau, Gandhi, Rachel Carson, and Martin Luther King, Jr. Grades 5-12.
120 pages, 8 $^{1}/_{2}$" x 11", softbound.
**ZS02-W . . . $14.95**

***ALPHABETICS: A History of Our Alphabet***
by Sally Patton (revised 1989)
This historical perspective of our alphabet encompasses the study of its major contributors—Prehistoric Man, the Sumerians, the Egyptians, the Chinese, the Greeks, and the Romans. Grades 2-8.
92 pages, 8 $^{1}/_{2}$" x 11", softbound.
**ZS06-W . . . $14.95**

***INVENTORS***
by Patton and Maletis (revised 1989)
Students examine the lives of Leonardo da Vinci, Benjamin Franklin, Thomas Edison, George Washington Carver, and the Wright Brothers. Follow a timeline of each inventor to find out how his creativity was affected by society and his environment. Grades 2-6.
72 pages, 8 $^{1}/_{2}$" x 11", softbound.
**ZS01-W . . . $14.95**

***MUSICIANS***
by Sally Patton (revised 1992)
This self-directed study unit introduces students to the elements of sound, instruments of the orchestra, elements of music, and five famous composers—Mozart, Beethoven, Strauss, Tchaikovsky, and Gershwin. Grades 2-6.
145 pages, 8 $^{1}/_{2}$" x 11", softbound.
**ZS03-W . . . $14.95**

***ARTISTS***
by Patton and Maletis (revised 1992)
Acquaint your students with the principles of design, the creative process, and five of the world's master artists—da Vinci, Homer, Picasso, Rembrandt, and Van Gogh. Grades 2-6.
90 pages, 11" x 8 $^{1}/_{2}$", softbound.
**ZS05-W . . . $14.95**

***REFLECTIONS ON WOMEN: In Monarchies and Democracies***
by Sally Patton (revised 1991)
Your students will not only research five exceptional women—Catherine the Great, Queen Victoria, Eleanor Roosevelt, Golda Meir, and Indira Gandhi—they'll also learn about the monarchies and democracies from each woman's viewpoint. Grades 2-6.
68 pages, 8 $^{1}/_{2}$" x 11", softbound.
**ZS08-W . . . $14.95**

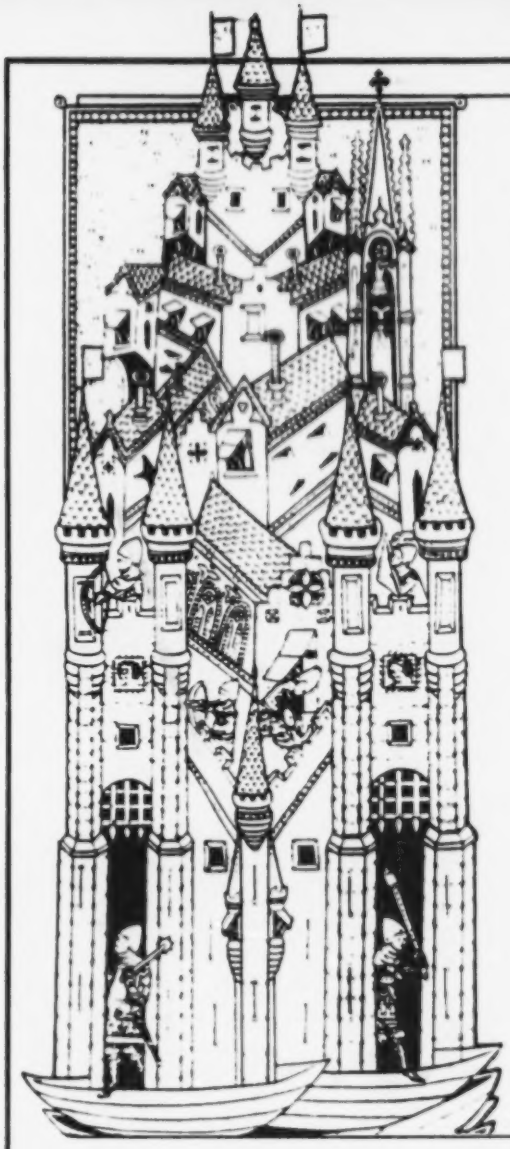
## *To order, write or call—*

**ZEPHYR PRESS**
P.O. Box 13448-W
Tucson, Arizona 85732-3448
(602) 322-5090 • FAX (602) 323-9402

REACHING THEIR HIGHEST POTENTIAL

*You can also request a free copy of our current catalog showing other learning materials that foster whole-brain learning, creative thinking, and self-awareness.*

NOTES



*Ah, to build, to build!*
*That is the noblest art of all the arts.*
*Painting and sculpture*
*are but images,*
*Are merely shadows cast*
*by outward things*
*On canvas or stone,*
*having in themselves*
*No separate existence.*
*Architecture*
*Existing in itself and not*
*in seeming*
*A something it is not,*
*surpasses them*
*as substance shadow.*

Longfellow, *Michel Angelo*

ARCHITEXTURE—ISBN 0-913705-38-1

**Be sure to see all the other titles available in the PATTON PENDING series. There is a topic to pique the curiosity of every child in your classroom:**

REFLECTIONS ON WOMEN: In Monarchies and Democracies
ALPHABETICS: A History of Our Alphabet
ARTISTS
MUSICIANS
ARCHITEXTURE: A Shelter Word
PHILOSOPHERS
NUMISMATICS: A Coin Word
INVENTORS

**Each book includes:**
- In-depth background information for the teacher.
- Up to 100 reproducible activities for task cards.
- Comprehensive list of reference materials.
- Complete bibliography.
- Discussion questions.
- Vocabulary expansion list.

**order from:**

**ZEPHYR PRESS • P.O. Box 13448 • Tucson, AZ 85732-3448**